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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/448,578	11/23/1999	NICK J. HUIGE	661005.90012	5200

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EXAMINER

SHERRER, CURTIS EDWARD

ART UNIT	PAPER NUMBER
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1761

DATE MAILED: 06/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/448,578

Applicant(s)

HUIGE ET AL.

Examiner

Curtis E. Sherrer, Esq.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/19/02.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-8,10 and 11 is/are pending in the application.
- 4a) Of the above claim(s) 7 and 8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-6, 10 and 11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

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DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4-6, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Quain *et al.* ((GB Pat. No. 2,197,341)("Quain")) in view of Masschelein *et al.* (Malting and Brewing Process)("Masschelein") and in further view of Dean, Jr., *et al.* (U.S. Pat. No. 4,978,616)("Dean") or Ripka (U.S. Pat. No. 4,764,471).

Quain teaches the oxygenation of yeast from a previous beer fermentation whereby the yeast is led into an oxygenation cell (9). See Abstract. In one experiment (page 2, line 18) 200g of wet yeast were suspended in 2 liters of distilled water. The amount of dried yeast per liter would be something less than 100g/liter. It is quite possible that it would be within applicants claimed range. After the yeast has been oxygenated, the yeast is used to ferment a wort to produce beer. Quain teaches the oxygen cell is comprised of a stainless steel tube or candle with perforation through which air or gaseous oxygen is caused to pass into the aqueous suspension of yeast. (Page 2, line 60). Quain discusses the advantages of aerating worts versus the old methods of not aerating worts (page 1, lines 21-35)).

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Quain does not teach the use of a hydrophobic microporous membrane to deliver the oxygen to the yeast. Masschelein teaches the use of a sintered silicon carbide structure and a 0.5 micron aluminum oxide membrane is used to transfer oxygen into yeast. (Page 380).

The Quain patent discusses the monitoring and varying of the oxygenation rate in order to maintain the oxygen concentration in the yeast remains substantially constant. Masschelein discusses the kLa values but the reference is of such poor readability that it is unclear what the values are. Nevertheless, because the art recognizes that the rate of oxygenation is a result effective variable, it would have been obvious to those of ordinary skill in the art to optimize the rate oxygenation in order to best oxygenate the yeast slurry.

Neither Quain nor Masschelian teach the use of a hydrophobic microporous membrane. Dean, previously cited, teaches the use of membrane oxygenators, such as those used for blood oxygenators, to transfer oxygen directly in the liquid on a molecular level without any gas-liquid interface, whereby foaming problems are avoided. (Col. 14, lines 49-65). At col. 15, line 5, Dean states that silicone tubing having a specified oxygen permeability to provide a 40 mg-mols of oxygen per liter is preferred. Ripka has been previously cited. It would have been obvious to those of ordinary skill in the art to use the membrane oxygenators of Dean or Ripka in the yeast oxygenation process of Quain in view of Masschelian as they minimize the foaming.

Response to Arguments

Applicant's arguments with respect to claims 1, 2, 4-6, 10 and 11 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

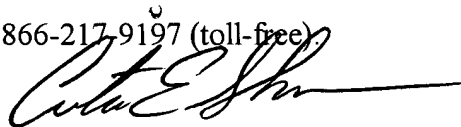
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Curtis E. Sherrer, Esq. whose telephone number is 571-272-1406. The examiner can normally be reached on Tuesday-Friday, 8AM-6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on 571-272-1398. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Curtis E. Sherrer, Esq.
Primary Examiner
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